



Celebrated minds

In 2016, many Indian-origin scientists made it big and got international acclaim for their work. From inventing binoculars which rapidly calculate the prescription for eyeglasses to microscopes made of paper, these scientists have kept the spirit of discovery alive. Snapshots of six scientists

VAISHNAVI RATHORE



RAMESH RASKAR

Cutting-edge technology

BORN IN Nashik, Ramesh Raskar is an associate professor at the Massachusetts Institute of Technology and the head of MIT Media Lab. Raskar invented the EyeNetra, which allows eye testing in remote locations. EyeNetra is a small binocular device that snaps onto a mobile phone. While looking into the binocular, the user can quickly calculate a prescription for eyeglasses. This eliminates the need for expensive diagnostic tools and is already being used in the US, Brazil, and India. He has also used femto-photography to capture images around corners.

Raskar has helped teams in Kumbh Mela by providing a technology that displays the heat maps of crowd movements. This can be used for crowd control. He has also developed a system to detect impending epidemic outbreaks in real time and a camera that allows users to read pages of a book without opening the cover.

The future applications of his work include avoiding car collisions at blind spots, detecting survivors in fire and rescue situations, and performing endoscopy and medical imaging to eliminate the need for an X-ray. Raskar was awarded the 2016 Lemelson-MIT Prize, which celebrates outstanding inventors.

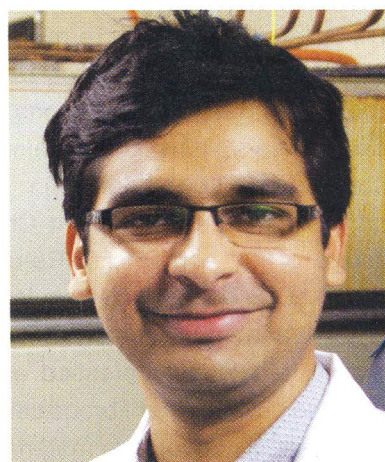
SUMEET WALIA

Nano-electronics

SUMEET WALIA is renowned for his work in nano-electronics. He specialises in the use of metal oxides for developing high-performance electronic devices.

This year the MIT Technology Review listed him among the "10 Innovators Under 35". Walia teaches at the Royal Melbourne Institute of Technology. Recently, he was part of a team of researchers who found that the performance of mobile phone cameras and solar cells could be boosted by the use of sound waves to controllably change the electronic properties of materials.

"My work focuses on fabricating



ultra-thin layers (thousands of times thinner than a human hair) of metal oxide materials and tailoring them for a range of functionalities in three key areas—to develop wearable sensors for healthcare monitoring and harmful gas detection; an electronic chip to store and recall events from the past, mimicking the functionality of the human brain; and, high speed nanoscale transistors that can operate at speeds faster than the current silicon-based electronic technologies and result in energy efficient, ultra-fast electronic devices," Walia told *Down To Earth*.

